Worksheet – Bronsted-Lowry Acids and Bases

Name_____
Period _____
Date_____

Identity the conjugation acid-base pairs in the following reactions. An acid donates a proton to become a conjugate base. A base accepts a proton to form a conjugate acid.

1.) $HCO_3^- + NH_3 \rightarrow CO_3^{-2} + NH_4^+$

2.) $HCl + H_2O \rightarrow H_3O^+ + Cl^-$

3.) $CH_3COOH + H_2O \rightarrow H_3O^+ + CH_3COO^-$

4.) $HOCl + NH_3 \rightarrow NH_4^+ + ClO^-$

5.) $H_2SO_4 + OH^- \rightarrow HSO_4^- + H_2O$

6.) $H_2SO_4 + H_2O \rightarrow H_3O^+ + HSO_4^-$

7.) $CO_3^{-2} + H_2O \rightarrow HCO_3^- + OH^-$

8.) $NH_4^+ + OH^- \rightarrow NH_3 + H_2O$

9.) $HCOOH + CH_3COO^- \rightarrow HCOO^- + CH_3COOH$

10.) $HCN + H_2O \rightarrow CN^- + H_3O^+$

11.) $C_6H_5NH_2 + H_2O \rightarrow C_6H_5NH_3^+ + OH^-$

12.) $H_2O + H_2O \rightarrow H_3O^+ + OH^-$

13.) $HSO_4^- + H_2O \rightarrow SO_4^{-2} + H_3O^+$

14.) $OH^- + H_3O^+ \rightarrow H_2O + H_2O$

15.) $NH_3 + H_2O \rightarrow NH_4^+ + OH^-$

Write the formulas for the conjugate bases formed by each of the following acids.

16.) $H_2PO_4^-$ _____ 17.) HCN _____

18.) H_2O _____ 19.) HOOCCOOH _____

Write the formulas for the conjugate acids formed by each of the following bases.

20.) F^- _____ 21.) OH^- _____

22.) H_2O _____ 23.) NH_3 _____

24.) After an acid has given up its proton, it is capable of getting back that proton and acting as a base. A conjugate base is what is left after an acid gives up a proton. The stronger the acid, the weaker the conjugate base. The weaker the acid, the stronger the conjugate base. Complete the table below.

Acid	**Base**	**Equation**
H_2SO_4	HSO_4^-	$H_2SO_4 \rightarrow H^+ + HSO_4^-$
H_3PO_4		
	F^-	
	NO_3^-	
$H_2PO_4^-$		
H_2O		
	SO_4^{-2}	
HPO_4^{-2}		
NH_4^+		
	H_2O	